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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/810,871	03/16/01	ELDRIDGE	B F70-US
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FORMFACTOR, INC.
LEGAL DEPARTMENT
5666 LA RIBERA ST.
LIVERMORE CA 94550

MM91/1003

EXAMINER

GILMAN, A

ART UNIT

PAPER NUMBER

2833

DATE MAILED: 10/03/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/810,871

Applicant(s)

ELDRIDGE ET AL.

Examiner

Alexander Gilman

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 16 March 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 12, 15, 16, 19, 22, and 27-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Eldridge et al.

With regard to claims 1, 22, 31, and 32, Eldridge et al (US Pat. No. 5,974,662) disclose an assembly comprising:

an interposer having substrate (504) having first and second opposite sides with a first set (516) of resilient terminals on the first side and the second set (514) of resilient terminals;

a first (502) and a second (506) electronic components having capture pads (510, 520); and

a housing (530, 540, 534) connected to secure the first and second electronic component to the interposer.

With regard to claim 12, Eldridge et al (US Pat. No. 5,974,662) disclose the substrate includes the multiple wiring layers (col. 28., lines 22-25).

With regard to claims 15 and 16, Eldridge et al (US Pat. No. 5,974,662) disclose the resilient contact structures formed by bonding and plating (Fig. 2E and 2i; layer 282).

With regard to claim 19, Eldridge et al (US Pat. No. 5,974,662) disclose the contact structures being the resilient spring structures.

With regard to claims 27-30, 34, and 35, the method steps are necessitated by the device structure as it is disclosed by applicant.

With regard to claim 33, Eldridge et al (US Pat. No. 5,974,662) disclose the active components mounted to the wiring layer (col. 28, lines 44-46).

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2. Claims 1, 2, 7-10, 20-22, 25, 27-32, 34, and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Khandros et al.

With regard to claims 1, 2, 22, 25, 31, and 32, Khandros et al (US Pat. No. 5.806,181) disclose an assembly comprising:

an interposer having substrate (504) having first and second opposite sides with a first set (516) of resilient terminals on the first side and the second set (514) of resilient terminals;

a first (502) and a second (506) electronic components having capture pads (510, 520); and

a housing (530, 540, 534) connected to secure the first and second electronic component to the interposer.

With regard to claim 2, Khandros et al disclose the resilient contact structures are offset in position from said second set of resilient contact structures (Fig. 4).

With regard to claims 7 -10, Khandros et al disclose (col. 17, lines 10-14) the substrate is formed of metallic material and ceramic material, silicon or organic material.

With regard to claims 20 and 21, Khandros et al disclose (col. 31, lines 65-66) the contact structures comprising solder balls (616, 618) and resilient spring structures.

Regarding to claims 27-30, 34, and 35, the method steps are necessitated by the device structure as it is disclosed by applicant.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eldridge et al (US Pat. No. 5.974,662).

For the space transformer, Eldridge et al disclose

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the resilient contact structures are offset in position from said second set of resilient contact structures (col. 28, lines 24-34);

the active and passive components disposed on the substrate (col. 28, lines 44-46).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the Eldridge et al disposer with the resilient contact structures are offset in position and the active and passive components disposed on its substrate, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

2. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eldridge et al (US Pat. No. 5,974,662) in view of Eldridge et al (US Pat. No. 6,032,356).

Eldridge et al (US Pat. No. 5,974,662) discloses all of the limitations except for the substrate including power and ground planes.

Eldridge et al (US Pat. No. 6,032,356) disclose the substrate including power and ground planes (col. 23, lines 34-36). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the Eldridge et al (US Pat. No. 5,974,662) with the substrate including power and ground planes, as taught by Eldridge et al (US Pat. No. 6,032,356), to ground the Eldridge et al (US Pat. No. 5,974,662) testing system.

3. Claims 13, 14, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eldridge et al (US Pat. No. 5,974,662) in view of Eldridge et al (US Pat. No. 6,184,053)

Eldridge et al (US Pat. No. 5,974,662) discloses all of the limitations except for the resilient contact structures are formed lithographically.

Eldridge et al (US Pat. No. 6,184,053) disclose the resilient contact structures formed lithographically (col. 3, lines 6-11).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the Eldridge et al (US Pat. No. 5,974,662) with the resilient contact structures formed lithographically, as taught by Eldridge et al (US Pat. No. 6,184,053), as an alternative design choice.

4. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eldridge et al (US Pat. No. 5,974,662) in view of Khandros et al.

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Eldridge et al (US Pat. No. 5,974,662) discloses all of the limitations except for the overtravel stops.

Khandros et al (US Pat. No. 6,064,213) disclose the overtravel stops (114).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the Eldridge et al (US Pat. No. 5,974,662) with the overtravel stops as taught by Khandros et al (US Pat. No. 6,064,213), to control the travel length of the resilient contacts during the test.

5. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eldridge et al (US Pat. No. 5,974,662) in view of Brozowski et al.

Eldridge et al (US Pat. No. 5,974,662) discloses all of the limitations except for the flexible substrate.

Brozowski et al (Electronic Packaging & Interconnection Handbook, McGraw-Hill, 1997, Ch. 8) disclose (p. 8-5) the flexible substrate.

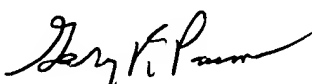
Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the Eldridge et al (US Pat. No. 5,974,662) with the flexible substrate, as taught by Brozowski et al, as an alternative design choice.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Gilman whose telephone number is (703) 305-847. The examiner can normally be reached on Monday-Friday, 10:00 a.m - 7:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula A Bradley can be reached on (703) 308-2319. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7322 for regular communications and (703) 308-7322 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.

AG
September 27, 2001


Gary Paumen
Primary Examiner